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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,605	07/11/2001	Yoshiyuki Okada	826.1735	7617

21171 7590 09/20/2004

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EXAMINER

SONG, JASMINE

ART UNIT	PAPER NUMBER
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2188

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/901,605

Applicant(s)

OKADA, YOSHIYUKI

Examiner

Jasmine Song

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE filed on 07/24/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 12-27 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-5 is/are allowed.
- 6) ☒ Claim(s) 1,2 and 6-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 October 2003 and 05/21/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Detailed Action

1. This office action is in response to RCE filed on 07/24/2004. Claims 12-27 has been canceled by previous amendment, claims 1-11 are therefore still pending. All rejections and objections not explicitly repeated below are withdrawn.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 6-7,9 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6 and 9 recite the limitation "the write area" in lines 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 7 recites the limitation "the write area" in lines 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 recites the limitation "the write area" in lines 7. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 8 and 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamato et al., U.S. Patent 5,944,792, in view of Aref et al., US 6,023,720.

Regarding claims 1,8 and 10, Yamato et al. teach that an access control apparatus (Fig.10, element 70) which processes a plurality of access requests (Fig.10, the read requests from the client 60 and col.15, lines 20-22) to a storage medium (Fig.10, element 10), comprising:

a scheduling unit (Fig.10, element 73) determining a deadline of **reading processes** for the storage medium (col.16, lines 53-58), based on a change of a transfer rate of data which is actually received (col.14, lines 60-67, col.15, lines 51-52 and col.17, lines 19-22), and setting an execution schedule for the plurality of access requests in descending order of deadlines (col.8, lines 44-48 and col.17, lines 52-57); and

a control unit (Fig.10, element 20, col.8, lines 6-9, lines 35-48 and col.17, lines 50-52) controlling execution of the access requests according to the execution schedule (col.17, lines 54-57).

Yamato does not teach determining a deadline of **writing processes** for the storage medium based on a change of a transfer rate of data which is actually received.

However, Aref teaches determining a deadline of writing processes for the storage medium based on a change of a transfer rate of data which is actually received (col.6, lines 31-37).

As taught by Aref, both read and write requests can be processed and subsequently inserted into the disk queue for processing while minimizing violations of both read and write request deadlines (col.6, lines 62-67 and col.5, lines 59-61).

Accordingly, It would have been obvious to one having ordinary skill in the art at the

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time the invention was made to utilize the teachings of Aref in the system of Yamato and have both read and write requests process the way as Aref taught for the advantages stated above.

Regarding claim 2, Aref teaches that said scheduling unit determines the deadline of the reading process according to information about a deadline of which is determined when the received data is written in response to read data from the storage medium (col.12, lines 54-57).

7. Claims 6-7, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamel et al., U.S. Patent 6,263,411 B1, in view of Aref., U.S. Patent 6,023,720.

Regarding claims 6,9 and 11, Kamel et al. teach that an access control apparatus which processes a plurality of access requests to a disk type storage medium, comprising:

a determination unit (Fig.1, element 12, MSFS) determining a write position of data in such a way that a plurality of write positions (Fig.2, disk queue 32 includes entries represent requests to the disk 30) can be located close to each other (Fig.5A or Fig.5B, all the write requests are close each other and col.10, lines 33-39) in response to requests to write data into the disk type storage medium (col.9, lines 41-45 and col.10, lines 43-45); and

a control unit (Fig.5B, element 114) controlling a process of sequentially writing data to the write area specified by each write request (col.7, lines 41-42 and col.8, lines 7-13).

Kamel does not teach that the write position of data is located on an area of disk 30.

However, Aref teaches that a plurality of write positions of data is located on the disk (Fig.2, read and write requests stored on memory 51 is located on disk 36).

As taught by Aref, the teachings of read and write requests stored on memory 51 which is located on the disk is advantageous to minimize violations of both read and write request deadlines (col.6, lines 62-67 and col.5, lines 59-61). Accordingly, It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize the teachings of Aref in the system of Kamek and have both read and

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write requests stored on memory 51 which is located on the disk as Aref taught for the advantages stated above.

Regarding claim 7, Kamel teaches that wherein said determination unit determines the write area (Fig.2, disk queue 32 includes entries represent requests to the disk 30) based on at least one of a number of the write requests and a total transfer rate of the plurality of write requests (col.6, lines 55 to col.7, lines 17).

Allowable Subject Matter

8. Claims 3-5 are allowed.

Response to applicant's Arguments

9. Applicant's arguments filed 05/21/2004 regarding claims 1-2,8 and 10 have been fully considered but they are not persuasive.

In response to the applicant's argument that Yamato determines a deadline time using a transfer rate registered in the transfer rate table 72, while the present invention determines deadlines based on a change of a transfer rate of data which is actually received (page 16, first paragraph of the applicant's remark), however, the Examiner notices that Yamato determines a deadline time using the transfer rate registered in the transfer table 72, and this transfer rate is the stored transfer rate of actually received data **except this transfer rate is stored in advance** (col.15, lines 52), the stored

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transfer rate affect the deadline time of a reading request according to the equation as shown in col.17, lines 15-20.

10. Applicant's arguments with respect to claims 6-7, 9 and 11 on page 16-17 have been considered but are moot in view of the new ground(s) of rejection.

11. When responding to the office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections. See 37 C.F.R. 1.111 (c).


12. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist examiner to locate the appropriate paragraphs.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasmine Song whose telephone number is 703-305-7701. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on 703-306-2903. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Jasmine Song 

Patent Examiner

September 16, 2004



Mano Padmanabhan

Supervisory Patent Examiner

Technology Center 2100

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER